

REMARKS

Entry of this Preliminary Amendment before continued examination of the instant application is respectfully requested. Claims 1, 8, 9, 11, 13, 14, 24, 31, 32, 34, 36 and 37 have been amended. No new matter has been added. Upon entry of this Amendment, claims 1, 2, 4-19, 22-25, 27-42, and 45-46 remain in the application. Claim 47 has been canceled herein. Reconsideration of the claims is respectfully requested.

Claims 1 and 24 have been amended to recite that no bleed-controlling polymer besides the hydrolyzed styrene-maleic anhydride copolymer is present in the pigment-based black ink and that no dispersible black pigment is present in the pigment-based black ink. These claims have also been amended to consistently describe the bleed-controlling polymer as consisting of hydrolyzed styrene-maleic anhydride copolymer. Claim 1 has also been amended to recite that all of the inks in the inkjet ink set include either at least one bleed-controlling polymer or at least one component capable of interacting with the at least one bleed-controlling polymer. Claims 8 and 31 have been amended to recite the values for X and Y. Furthermore, claims 8, 9, 11, 13, 14, 31, 32, 34, 36, and 37 have also been amended such that they are consistent with the amendments to claims 1 and 24. Claim 35 has also been amended to correct a typographical error. Claim 47 has been canceled herein.

Claims 8 and 31 stood rejected (in the final Office Action dated May 17, 2007) under 35 U.S.C. § 112, second paragraph.

In light of the revisions to claims 8 and 31, which recite the values of X and Y, it is submitted that the Examiner's concerns are now satisfied, and that the § 112, second paragraph rejection of claims 8 and 31 is now obviated. Withdrawal of the same is respectfully requested.

Claims 1-2, 4-8, 13-18, 24-25, 27-31, 36-41 and 47 stood rejected (in the final Office Action dated May 17, 2007) under 35 U.S.C. § 103(a) as being unpatentable over Koitabashi et al. Claims 11-12 and 34-35 stood rejected under 35 U.S.C. § 103(a) as being unpatentable over Koitabashi et al. as applied to claims 1-2, 4-8,

13-18, 24-25, 27-31, 36-41 and 47 and further in view of Momose et al. Claims 19, 22-23, 42 and 45-46 stood rejected under 35 U.S.C. § 103(a) as being unpatentable over Koitabashi et al. as applied to claims 1-2, 4-8, 13-18, 24-25, 27-31, 36-41, and 47 above, and further in view of Parazak. Claims 1-2, 4-19, 22-25, 27-42, and 45-47 stood rejected under 35 U.S.C. § 103(a) as being unpatentable over Parazak in view of Zhu.

Applicants' invention as defined in claim 1 and those claims depending therefrom recites an inkjet ink set comprising: a pigment-based black ink including at least one self-dispersed black pigment, at least one cosolvent, water, optionally at least one water-soluble surfactant/amphiphile, and at least one bleed-controlling polymer consisting of hydrolyzed styrene-maleic anhydride copolymer; and at least one dye-based color ink including a component selected from the group consisting of multivalent salts and organic acids, a water-soluble dye, at least one cosolvent, and water. The at least one bleed-controlling polymer interacts with said multivalent salts which are incompatible with the polymer, or interacts with said organic acids by rendering said polymer in said pigment-based black ink insoluble by transforming said polymer into a water-insoluble protonated form and thereby improving black-to-color bleed. Organic acids are selected from the group consisting of: polyacrylic, acetic, glycolic, malonic, malic, maleic, ascorbic, succinic, glutaric, fumaric, citric, tartaric, lactic, sulfonic, ortho-phosphoric acids and mixtures thereof. No bleed-controlling polymer besides the hydrolyzed styrene-maleic anhydride copolymer is present in the pigment-based black ink. Furthermore, no dispersible black pigment is present in the pigment-based black ink. Still further, claim 1 recites that all of the inks in the inkjet ink set include either at least one bleed-controlling polymer or at least one component capable of interacting with the at least one bleed-controlling polymer. Applicants' invention as defined in claim 24 and those claims depending therefrom relates to a method of controlling bleed between a black pigment-based inkjet ink and a color dye-based inkjet ink, and has been amended to include some of the recitations of revised claim 1.

In the final office action dated May 17, 2007, the Examiner stated that the phrase “consisting essentially of” used as transitional language with respect to the ink set and to the ink, is recognized as narrowing the scope of the claims to specified materials and those materials which do not materially affect the basic and novel characteristics of the claimed invention, but is construed as being equivalent to “comprising” absent a clear indication of what the basic and novel characteristics are.

While the Applicants do not acquiesce to the Examiner’s conclusion, Applicants have removed the phrase “consisting essentially of” from claims 1 and 24. This phrase has been replaced, for the most part, with the term “comprising”. In claims 1 and 24, clauses have been added which state that no bleed-controlling polymer besides the hydrolyzed styrene-maleic anhydride copolymer and no dispersible black pigment are present in the pigment-based black ink. Thus, in each claim, the pigment-based black ink excludes bleed-controlling polymers other than the claimed hydrolyzed styrene-maleic anhydride copolymer, and also excludes dispersible black pigments. Furthermore, in claim 1, another clause has been added which states that all of the inks in the inkjet ink set include either at least one bleed-controlling polymer or at least one component capable of interacting with the at least one bleed-controlling polymer. As such, each ink in Applicants’ ink set of claim 1 is capable of reacting with at least another ink in the ink set to control black-to-color bleed.

In sharp contrast, Koitabashi teaches an ink set with three different inks, including a black ink with a self-dispersible black pigment **and** a dispersible black pigment; and two color inks, one of which contains a multivalent metal and the other of which does not contain a multivalent metal.

As previously stated, Applicants’ black ink as recited in claims 1 and 24 **does not include** a dispersible black pigment. For at least this reason, Applicants’ ink set and method as defined in amended claims 1 and 24 respectively, do not include the black ink described by Koitabashi.

For the above reasons, Applicants' invention as defined in independent claims 1 and 24 is neither taught nor rendered obvious by Koitabashi, either alone or in combination, and patentably defines over the art of record. In particular, both Momose and Parazak fail to supply the deficiencies of Koitabashi. As such, it is submitted that the combination of Koitabashi with either Momose or Parazak does not anticipate, suggest or render obvious claims 1, 24 or any of the claims depending ultimately therefrom. As such, Applicants submit that the rejections under 103 over Koitabashi, either alone or in combination, have been overcome, and withdrawal of the same is respectfully requested.

Regarding the § 103(a) rejection of claims 1-2, 4-19, 22-25, 27-42 and 45-47 over Parazak in view of Zhu, Applicants submit that independent claims 1 and 24 recite that no bleed-controlling polymer besides the hydrolyzed styrene-maleic anhydride copolymer is present in the pigment-based black ink. Parazak requires the use of an acrylate polymer, and Zhu includes an additional wax. In light of the revisions to Applicants' claims, the acrylic polymer of Parazak and the additional wax of Zhu are excluded as possible bleed-control polymers. Furthermore, the problems with using "acrylic type" polymers, which include the acrylate resins of Parazak, are mentioned in the present specification at least at paragraphs [10] and [11]. As such, it is submitted that neither Parazak nor Zhu anticipate, suggest or render obvious an ink set or method as defined in Applicants' pending claims.

For the above reasons, Applicants respectfully submit that the rejection of claims 1, 24 and those claims depending therefrom under 103 over Parazak in view of Zhu has been overcome, and respectfully request withdrawal of the same.

In summary, claims 1, 2, 4-19, 22-25, 27-42, and 45-46 are pending in the application. It is submitted that, through this Amendment, Applicants' invention as set forth in these claims and in light of the above amendments and remarks, is now in a condition suitable for allowance. Further and favorable consideration is requested.

If the Examiner believes it would expedite prosecution of the above-identified application, she is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

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